PROFESSIONAL ENGINEER

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WINTER ISSUE

JEFFERSON MEMORIAL, WASHINGTON, D. C.

Vol. 38 No. 3

BOOKS FOR ENGINEERS

MODERN ELECTROPLATING

Edited by ALLEN G. GRAY, *Technical Editor,* STEEL *Magazine. With 39 contributors.* A complete one-volume summary of current industrial electroplating practices. Emphasizes practical aspects *and* basic theory. Discusses uncommon metals, plating on aluminum and magnesium. Sponsored by The Electrochemical Society. *1953. 563 pages. $8.50.*

FERROUS PROCESS METALLURGY

By the late JOHN L. BRAY, *Purdue University.* Covering the major ferrous metals, this book provides the latest data on blast furnace operation and on steel making techniques developed in the last few years. Presents essential topics on the reduction and refining of metals in easily understood terms. *1954. Approx. 415 pages. Prob. $6.50.*

MATERIALS AND PROCESSES, Second Edition

By JAMES F. YOUNG, *of the General Electric Company.* Offers a complete survey of current engineering materials and manufacturing processes—presented from the viewpoint of the engineer. The volume contains all the interrelated information you need to apply engineering fundamentals to the design, production, and control of products. *1954. 1074 pages. $8.50.*

STRESS CONCENTRATION DESIGN FACTORS

By R. E. PETERSON, *of the Westinghouse Research Laboratories.* Includes a useful set of calculations, procedures, and solutions for whipping fatigue problems involving stress factors. Shows how to create designs that are superior from the standpoint of resistance to repeated loads. Contains a thumb index, opens flat, offers large grid charts. *1953. 155 pages. $8.50.*

INTRODUCTORY CIRCUIT THEORY

By ERNST A. GUILLEMIN, *of The Massachusetts Institute of Technology.* Introduces the basic concepts and interpretations needed to keep up with the modern approach to advanced problems involving circuit theory. Provides discussions of methods of steady-state and transient circuit analysis, plus concepts essential to synthesis procedures. Valuable graphic interpretations are included. *1953. 550 pages. $8.50.*

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PROFESSIONAL ENGINEER

"The Voice of the Engineer"

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"There must be as the basis of every organization that lives, an altruistic spirit. No organization that is founded on selfishness can endure permanently, but an organization that is founded on altruism, on the desire to do for others rather than a desire to get for oneself, has an element of life that will make it long endure."

M. E. McIVER, Editor

rican Association of Engineers assumes no responsibility for statements made or opinions expressed by contributors of articles published in Professional Engineer.

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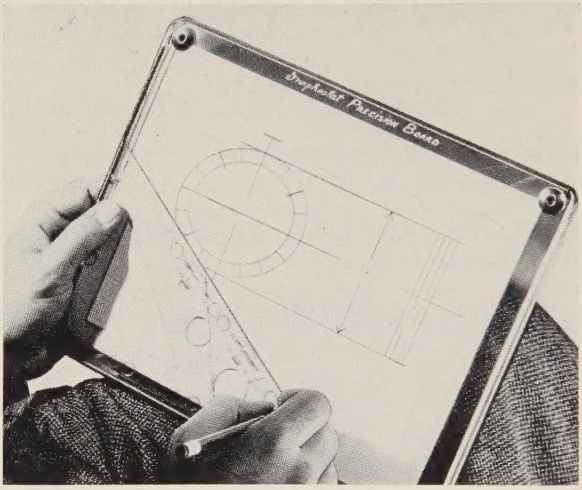

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1914 . . . A.A.E. . . . 1954

ENTER THE MONAD*

The American Association of Engineers was formed early in 1914 by a body of young engineers who thought that there was a field to be covered by a society which had not been worked in heretofore. Its founders had no definite idea as to how certain existing evils from which the profession was suffering could be corrected. During the early stages of organization, there were decided differences of opinions before the policies under which it is now operating were clearly defined.

Fortunately, the policies adopted were well planned, for they have carried A.A.E. successfully past the formative period, and it has undertaken projects with the aggressive enthusiasm of youth, even though it has been criticized by a few of the more conservative members of the Profession. Now, we believe, we should have a periodical free from all obligations in order that its editorial policies may express those matters which we feel will be most effective in raising the standards of ethics of the engineering profession and promoting the social and economic welfare of engineers.

Therefore, "The Monad" makes its bow. It proposes to cooperate with any and all societies, publications, corporations, and individuals who are willing to assist in furthering the advancement of engineers and engineering so that their works will redound to the benefit of society.

Through the dissemination of information the Monad hopes to guard the interests of engineers and the public against exploitation. In addition to being a medium for the interchange of information for members, we hope to develop a department which will be interesting reading to the layman whereby the public and the engineer may become better acquainted. It has no intention of publishing highly technical articles, preferring to relegate these to the technical journals and periodicals now in the field.

Its pages are to be devoted primarily to items of material interest to the individual engineer and those who benefit through his endeavors. We invite the cooperation of all interested and will be thankful for constructive criticism and discussion which will help the Association solve the problems of the engineers along cooperative lines.

EXIT MONAD—ENTER PROFESSIONAL ENGINEER

In January, 1920, when the Association was extremely active in the registration movement, the magazine appeared under its present title "Professional Engineer." Editorially, at that time, objectives of the magazine and those of the Association were rather definitely stated. To show how well thought-out and planned were these objectives, and how consistently

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*Excerpts from an Editorial appearing in the Association's first publication—"The Monad," Vol. 1, No. 1, Feb. 1916.

they have been followed down the years, let us bring back this editorial of 34 years ago:

A SERVICE MAGAZINE

"This new magazine, while primarily a publication for the members of the American Association of Engineers, is planned as a service magazine for all professional engineers. It will not be a publication limited in scope to the record of Association activities, but it will be a medium for the publication of pertinent engineering news and the best thought on matters of interest to the profession. Its contents will not be limited to the views of any so-called "leaders," but it is hoped that the opinions and conclusions of all earnest, sincere engineers who have something to say which is worth listening to will become available to the profession through its columns. It is practically the only magazine which reaches architects, chemists, and engineers of all the various branches, and it is the one medium available for discussion of topics of interest to all engineers—not only mechanical, or electrical, or civil engineers, but professional engineers of all technical divisions."

Again to show that the Association has ever since its inception believed in and worked toward greater unity in the Engineering profession we quote from a 1920 issue of the Association's magazine:

UNIFICATION

"There are many things to discuss, but the most important is the unification of the engineering profession. We engineers have been talking among ourselves a great deal about how we were peculiarly fitted to serve the public; how dependent industry is on our services; that the great things we have done have been passed almost unnoticed by the nation in favor of the advance in surgery, the appointment of judges, and the world's heavyweight championship, and that we should attempt to take our place in political activities commensurate with our knowledge and ability. Yet, we stand condemned by our own factional jealousies as a profession which cannot solve its own problem of becoming a solid unit.

"The profession is almost unanimous in declaring the need of one great organization of engineers. Such a universal society must be more than a paper organization. It must be more than a group. It must be a body of men with common aims, a universal community of thought, common ideals, and a single cause. Unless the membership itself is bound by a common appreciation of the things to be accomplished and a will to subordinate self to the common good it will be impotent.

"The great principle which has made A.A.E. a success is the spirit of service to engineers through a democratic organization. As engineers have learned to appreciate this principle and have realized the feasibility of its application they have joined A.A.E.

"The local societies which have amalgamated with the Association have ealized the futility of any other relationship between themselves and .A.E. than a bona fide consolidation of membership. If the local society ere allowed to remain a separate entity it would be unable to absorb the pirit of A.A.E.

"Any federation of societies would be as much a failure as the original ederation of States, prior to the adoption of the present constitution of ne United States in 1789, which was proved inadequate as a system of overnment for this country.

"So with the engineering profession; there must be built up a harmonus structure which will permit proper division of professional problems mong the elements capable of solving them."

Over the years, the Association has kept itself open to all types of ngineers and has set up the objectives which a universal membership uld easily attain and which would enormously benefit individuals even hile it improved the standards of the entire profession. We do not strict our membership to those who have a legalistic claim to the title rofessional Engineer" through registration—not so long as registration non-essential to practice in many grades of professional engineering d not until our laws blanket in all who, through education or on-the-job aining, have acquired sound knowledge of engineering fundamentals. ot, in other words, until our laws effectively and realistically define the ope of the profession, and regulate entrance thereto.

While the tendency to unite is "in the air" and has been given thoughtl consideration throughout the years by engineers there have been many tions of the proper manner of effecting such group action and the only mmon quality of these movements is the fact that, grouping for unity ne of them ever seem able to think quite far enough to appreciate that e only agency which can do all the things that the various ranks and ades seem to demand is one supported by all engineers and especially signed to attack professional rather than technical problems:

The technical groups draw closer together to solve the problems of their spective memberships; organizations determined by geographical boundies, city clubs, county and state associations are working in their own y on much the same problems. New types of affiliation come into existce, some of them insisting upon a differentiation of the interests of emyee and employer, or executive engineers. Among the unaffiliated the ndency is to seek a short cut to standardized pay. Engineers may be awing together but they are not in any manner looking toward real unity unity that will be beneficial to all engineers.

"To promote the social and economic welfare of the engineer, to mulate public service in the profession, to develop the efficiency of the gineer" are all worthy objectives, which can and will be realized by operative effort on the part of individual engineers. In this ambitious ogram, *unity* is the first step.

LET'S LOOK AT THE RECORD - - - -

Consider the Future!

We find that the Association has pioneered in a good many activities. Once in a while it is helpful to take stock of what has been done, so that plans for the future may be made intelligently, and in keeping with the aims and objectives of the men who founded the Association.

The young engineers who founded the Association in 1915 and every one of the thousands of engineers who have at one time or another during the past thirty-eight years, held membership in A.A.E., coupled with the engineers who are now members have had a vital part in establishing and maintaining an organization in which engineers of all branches, and in all stages of professional development may cooperate to advance.

To them must go the credit for the years of pioneering in many untried fields of professional welfare work. The record looks something like this: American Association of Engineers—

Made and published studies concerning factors which have promoted solidarity in other professions.

Supported campaigns for engineering registration laws in 35 states.

Coaching local leaders, supplying speakers and funds in 27 states.

Prepared and published "Survey of our Registration Laws" showing their weakness in comparison with licensure of doctors, lawyers, dentists.

Prepared and published studies of laws in operation, showing difficulties of enforcement and administration.

Aided in forming the National Council of State Boards of Engineering Examiners.

Participated in joint society conferences to draft and revise the Model Law.

Crystallized and enunciated "Specific Principles of Professional Conduct" from actual "practice cases" and decisions.

Prepared and published "Code of Ethics."

Prepared and published "A Vow of Service."

Published studies on "ethical codes" of other professions and their methods of enforcing them.

Pioneered in employment service and vocational guidance.

Freed engineers of reliance on commercial employment agencies.

Placed more than 25,000 engineers in positions.

Engaged in systematic study of employers' desires as shown in employment service data.

Published Vocational Guidance in Engineering Lines.

Published "The Market for Engineering Services, 1940."
Published "Before and After VJ Day" survey of market.
Published series of practical bulletins on "selling services," preparing experience records and applications, interviews, etc.
Published series of articles on employment opportunities in non-engineering fields for men with engineering training.

romoted efficiency of engineers.

Through chapters established extension courses in English, public speaking, accountancy, business law, etc.
Stimulated interest in self-instruction, through technical books, meetings, etc.
Published instructive and inspirational articles prepared by employers, deans of engineering schools, sociologists, etc.

ioneered in classification of engineering schools.

Published articles urging broadening of engineering training.
Conducted campaign to eliminate dishonest trade and correspondence schools and induce substantial schools to set up and maintain higher standards.
Conducted campaign for better compensation of engineering educators and better qualified teachers in the engineering schools.
Formed student chapters to acquaint prospective engineers with economic and professional problems.

onducted campaign for more adequate compensation for engineers.

Secured increases averaging $5,000,000 annually for railway technical men.
Secured substantial increases for Navy technical men.
Secured equitable adjustment of retirement benefits for federal civil service employees.
Prepared and supported salary schedules for municipal employees.
Prepared and supported salary schedules for county employees.
Directed campaigns and secured salary increases for municipal engineers in 8 cities.
Directed campaigns and secured increases for state and county engineering employees.
Published Specifications for Engineering Positions in the Highway Field, and Recommended Schedule of Fees for Engineers in Public Service.
Published "Standards on the Classification and Compensation of Professional Engineering Positions," and "Incomes of Professional Engineers in Public Employment."

nducted studies and prepared and published schedule of fees for engineers in independent practice.

Published "How to Employ and Use Engineering Services."
Published "Publicity Methods for Engineers."
Opposed government intrusion on field of private practice.
Opposed legislation intended to impose unfair restraints on patents and

individual rights to benefits from inventions.
Opposed measures designed to "regiment" technology (Kilgore bills).
Opposed "free engineering services" of manufacturers, dealers, etc.
Opposed appointment of non-engineers to positions involving technological knowledge and skills.
Opposed unionization of professional employees because of its tendency to destroy unity in the profession.
Blocked unionization of railway and Navy technical men.
Conducted systematic study of Wagner Act in operation:
Reported all developments in PROFESSIONAL ENGINEER.
Published "Technologists' Stake in the Wagner Act."
Published series of articles called "Exploded Views of the Wagner Act."
Aided employee groups opposed to absorption in heterogeneous unions.
Campaigned for amendment of the Wagner Act to restore freedom of association to professional engineers.
Published "Technologists' Stake in the Taft-Hartley Act."

Provided Personal Service and Benefits to Individual Members.
Legal research and guidance.
Information and advice on patents and inventions.
Book and equipment information and service.
General information service.
Miscellaneous personal service.
Free accident and dismemberment insurance.
Vocational guidance and placement service.

Stimulated Public Service in the Profession.
Championed National Department of Public Works.
Campaigned for "engineers in engineering positions."
Published report on "Public Improvements and the Tax Rate."
Supported Civil Service Reforms; championed rights of individuals and groups under civil service regulations.
Opposed regimentation of engineers; demanded effective use of engineers in defense program.
Aided all branches of government in finding personnel for special services (civilian and military) during World War I and II.
Assisted federal agencies in securing data for special studies (fuel, highways, conservation, personnel, etc.)
Publicized "reconversion" and "demobilization" plans and sought cooperation of engineers.
Made a survey of the civic attitudes and activities of engineers throughout the nation.

Conducted systematic campaign to improve public relations of profession.
Coached chapters in publicity techniques; engaged world famous public relations experts to direct the project.

Established contacts, and released volume of publicity on achievements of engineers and the social value of their work.
Recognized public service by individual engineers.
Acquainted many communities with work of their engineers.
Organized "Public Relations Committee of the Whole," with three working divisions, "Fact Finders," "Clipping Club," and "Listeners-In" Club.
Made and published systematic study of engineering's portrayal in advertising, fiction, movies, radio, columns, editorials, news stories.
Exposed "Self-styled" engineers to ridicule.
Sponsored radio broadcasts, meetings, etc., to emphasize the social and economic importance of engineering—society's reliance on good engineering.
Consistently emphasized the "human side of engineering"—service to the profession and service to society.

The Engineer is one of the most highly trained, practical, efficient, hard-working, creative and indispensable servants of society. Of all professional men, he is the greatest contributor to the economic progress and wealth of the community.

CIVIC RESPONSIBILITIES

"To stimulate Public Service in the Profession," one of the objectives of A.A.E.

American Association of Engineers encourages its own members and chapters to identify themselves with the most effective local civic agencies, to participate actively in all projects calculated to contribute to better living in their communities. We have urged civic agencies, such as Chambers of Commerce, Rotary, Lions and Kiwanis Clubs and national organizations, the National Association of Manufacturers, the Twentieth Century Fund, the Chamber of Commerce of the U.S., and others, to use more freely and effectively the great undeveloped asset represented in trained engineers.

We approach the problem from the negative as well as the positive side, protesting the inertia and the lack of integration which makes the engineering profession impotent in civic affairs.

Misappropriation of technical responsibility might not prevail so often in civic affairs if engineers enjoyed greater unity. Engineers should have an organizatiton powerful enough to demand that the judgment of experts prevail in planning and designing public works. Until they do, technologists will continue to design in the narrow sense, what politicians, diplomats and business men plan, and in the broader sense, design. While that condition prevails, engineers are in default to society; they are not carrying the collective social responsibilities that membership in a profession connotes; the nation is not receiving the returns it has a right to expect from the tremendous investment it has made in engineering education.

AAE MEMBERSHIP KEY

Established in 1951

Designed by Walter R. Kostner

The front of the key has engraved upon its surface the letters AAE, representing, of course, the initials of the American Association of Engineers. The quill pen symbolizes the initial and persistent efforts of AAE in promoting and securing passage of registration laws for engineers; formulation of a code of ethics, and codification of principles of good professional conduct; research and fact-finding in the field of business problems, civic responsibilities and public relations of engineering, as well as education and action in encouraging and developing the efficiency of engineers, and promoting unity in the profession.

The small indentations forming the border represent the number of years elapsed since AAE was founded in 1915 and the establishment of the key in 1951 . . . 36 years.

The back of the key has engraved upon its surface a mathematical symbol known to ALL engineers as a definite integral. It is the sign of summation, and is generally used to indicate the summing of a vast number of small quantities of indefinitely minute magnitude that go to make up the total required. Each and every engineer in AAE is one of these small quantities. The Association is the total.

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New Books For Engineers

Activity Analysis of Production and Allocation, Tjalling C. Koopmans, John Wiley & Sons. $4.50.

The thirteenth in a series of Cowles Commission Monographs, written by prominent economists, mathematicians and administrators, the book deals with the efficient fitting together of the many interdependent activities of a large and complex undertaking.

Boiler Feed Water Treatment, F. J. Matthews, 3rd Ed. Chemical Publishing Co. $4.50.

The purpose of this book is to provide the operator of the small "ordinary" plant with some guidance to the wide variety of treatment now available, and with a view to assisting rapid reference and lessening confusion, the information is presented in articulate form. Principal operating troubles are discussed.

Thermodynamics, George A. Hawkins, a logical, clear and accurate presentation of the fundamentals of engineering thermodynamics, 2nd Ed. 1951. $6.50

Analytical Mechanics for Engineers, Fred B. Seely, Head, Dept. of Theoretical and Applied Mechanics, and Newton E. Ensign, Prof. of Theoretical and Applied Mechanics, Emeritus, Univ. of Illinois. John Wiley & Sons, Inc. 4th ed. $5.50.

In the new edition, as in previous ones, emphasis is placed on the use of the general steps or procedure in analyzing problems in equilibrium and in dynamics. New problems and figures have been included. A general coplanar force system, rather than the simplest force system, is used to explain the graphical and algebraic methods of determining the resultant for a force system.

Architects' and Engineers' Data Book, Westinghouse Electric Corporation, Public Relations Department, Pittsburgh, Pa.

A new revised edition of the architect and engineers electrical data book is so designed that detailed information on almost any type of electrical equipment is readily accessible. While the book is not for general distribution, practicing engineers may obtain a copy by writing the nearest district office of Westinghouse.

I Remember. Dexter S. Kimball, Emeritus Prof., M.E., Cornell University. McGraw-Hill Book Co. $4.00.

In his autobiography, Dean Kimball tells in interesting style his rise from machine shop apprentice to the administration of one of the greatest engineering schools in the country, Cornell. He has woven into his story an account of America's awakening to the miracles of the machine age. Those who remember Dean Kimball will want a copy of this interesting book.

Route Location and Surveying. T. F. Hickerson, M., A.S.C.E. 3rd ed. McGraw-Hill Book Co. $6.00.

Formerly published under the title of Highway Surveying and Planning, the third edition is broader in scope, includes transportation systems, such as railways, canals, pipe lines, and airways and airports. Designed as a classroom text, a field manual, or a reference book in general engineering practice. Attention has been given to making the tables as accurate as is possible.

Introduction to Heat Transfer, Aubrey I. Brown and Salvatore M. Marco, Ohio State University, 2nd Ed. 1951. $4.50

From the Life of a Researcher, Wm. Weber Coblentz. 1951. $4.75

Hydraulic Transients, George R. Rich, Consulting Engr., Charles T. Main, Inc. Engr. Soc. Monographs Series. 1951. $7.00

Selected Values of Physical and Thermo-Dynamic Properties of Hydrocarbons and Related Compounds. $7.00 (to A.P.I. members $5.25) Carnegie Press.

This book compromises the tables of the A.P.I. research Project 44 Extant as of December 31, 1952, and is a momumental work. Since its establishment in 1942 the project has been under the direction of outstanding members of the industry.

Electrical Engineering Instructions, L. E. Beck, Prof., El. Engrg., Purdue University. Tri-City Offset Company, $8.00.

Divided in five parts. Instanteous and Direct Currents, Direct Current Machines, Sinusoidal Alternating Currents, Alternating Current Machines, and Electronics and Rectification, this 396 page book, 8¼x11, combines the functions of a textbook and a problem sequence. Material is well arranged, and for the non-electrical engineering student this book constitutes a complete electrical engineering course of two-semester or three-semester duration.

Elements of Radio, Abraham and William Marcus, 3rd ed. Prentice-Hall, Inc. $6.00.

Great advances have been made in radio since the first edition was published ten years ago, but basic principles of course, still hold true. The chapter on Radio Antennas has been expanded and the development of the transistor is discussed. The book contains 772 pages, is well illustrated and easy to read. Questions and problems and glossary follow each chapter.

Communication Theory, Edited by Willis Jackson. Academic Press, Inc. $11.00.

The book consists of papers read at a symposium on "Applications of Communication Theory", held at the Institution of Electrical Engineers, in London, on September 22-26, 1952. A summary of the subject follows an address by Prof. Jackson, which is intended as a

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refresher or compendium for non-specialists who wish to read the later specialist papers.

Nuclear Physics, by W. Heisenberg, Director, Max Planck Inst. of Physics, Gottingen, Philosophical Library $4.75.

The distinguished author manages, in this book, to convey a great deal about nuclear physics, in simple language and without mathematics. And while he has not brought the subject up to date, he does give the reader a tentative and provisional introduction to it.

Engineering Valuation and Depreciation, 2nd ed. Anson Marston, late dean emeritus, Engrg., Iowa State, Robley Winfrey, formerly Prof., C. E., Iowa State, and Jean C. Hempstead, Prof., Gen. Engrg., Iowa State. McGraw-Hill Book Co. $8.00.

Written for use as a textbook in schools of engineering and business wherein a course in valuation of property is offered. Valuable to engineers and others engaged in appraisal practice as a useful reference. Material is excellently arranged and was, of course, prepared by outstanding engineers in this particular field.

Fundamental Research in Administration, Horizons and Problems. Carnegie Press. $2.00.

A book for management leaders dealing with retirement and economic problems and various related topics discussed in the informal round-table at the dedication of the new Graduate School of Industrial Administration, Carnegie Institute of Technology.

Basic Welding Principles, Emanuele J. Stieri, Prentice-Hall Inc. $5.75.

For the beginner or the expert here is a new and authoritative book with up-to-date instructions in all types of welding procedures. More than 650 illustrations. A complete index and Welding Glossary.

Kinematics of Machines, Rolland T. Hinkle, Prof., Mech. Engrg., Michigan State College. Prentice-Hall, Inc. $4.75.

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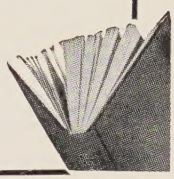

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The book presupposes a knowledge of engineering mechanics; however, calculus is sufficient if the reader comprehends the first two chapters. New and helpful material has been included on velocity and acceleration polygons, special constructions, chains, gears, etc. Problems conclude each chapter.

Information Theory, Stanford Goldman, Prof., El. Engrg., Syracuse Univ. Prentice-Hall, Inc. $9.00.

The book presents a thorough discussion of the principles of information theory, and is based on the pioneering and classical work of C. E. Shannon, and on the earlier and also classical work of Norbert Wiener. Many of the problems presented should be useful to the teacher and to those who may use the book for self-study.

Space Travel, Kenneth W. Gatland and Anthony M. Kunesch, Philosophical Library. $4.75.

A brief history of rocket development and interesting information on the harnessing of the tremendous new propellants available today which may soon make journeys into space a commonplace of human life.

Materials and Processes, James F. Young, Major, Appliance Div., General Electric Co. 2nd ed. John Wiley & Sons, Inc. $8.50.

The second edition of this valuable book expands a philosophy of instruction which was enthusiastically received in the book's initial edition. All the information one needs to apply the engineering fundamentals of materials and processes to the design, production, and control of products, is provided in this volume. The book has been brought right up-to-date and greatly expanded to cover developments of the last decade.

Elements of Statistics, H. C. Fryer, Prof., Mathematics, Statistician, Agri. Exp. Station, Kansas State College. John Wiley & Sons, Inc. $4.75.

The author intended this book for the reader encountering statistics for the first time—either as a newcomer to the subject, or as a worker in the growing number of fields which draw on statistics as a research tool. Basic ideas are illustrated by means of actual sampling data which can easily be augmented by examples from the reader's own experience. Nearly 500 realistic problems are presented.

Aether and Electricity, History of the Theories of, Sir Edmund Whittaker, F.R.S., Honorary Fellow, Trinity College, Cambridge. Philosophical Library, $8.75.

The purpose of this volume is to describe the revolution in physics which took place in the first quarter of the 20th century, which included the discoveries of Special Relativity, the older Quantum Theory, General Relativity, Matrix Mechanics and Wave Mechanics.

Materials Handling, John R. Immer, Prof., Industrial Management, Assist. Director, Div. of Business Studies, The American Univ. McGraw-Hill Book Co. $8.00.

A comprehensive text and a practical guide, which not only describes specific methods of handling, but also illuminates the underlying characteristics common to many handling problems. A good bibliography and an interesting list of films.

Business, Legal, and Ethical Phases of Engineering, Second ed. D. T. Canfield, Prof. Elect. Engrg., Purdue Univ., and J. H. Bowman, Prof. Elect. Engrg., Purdue. McGraw-Hill Book Co. $6.00.

The second edition of a successful work by eminent engineers, designed to help the student to make the transition from the classroom to the practical field. Contains some interesting material on managerial duties, helpful to all engineers.

Fluid Mechanics, Victor L. Streeter, Dir., Fund. Fluids Res., I.I.T. First Edition. 1951. $5.0

Informative bulletins

Proceedings of the Second Midwestern Conference on Fluid Mechanics, 1952, held at Ohio State University. Engrg. Experiment Station, Bulletin No. 149. $6.00.

Industrial Instrumentation for the Process Industries, Dept., Chemical Engrg., Univ. of Florida. Bulletin Series No. 55.

Storm Protection Laboratory, for testing building components and other materials under hurricane conditions. Bulletin Series No. 56.

Differential Thermal Analysis of Clay Minerals under Controlled Thermodynamic Conditions by Robert L. Stone. Bulletin No. 146. Ohio State Univ. $2.00.

University of Florida, Tech. Paper Series No. 75: Experimental Development of High-Speed Continuous Alkaline Pulping by W. J. Nolan and W. F. Brown. Industrial Wastes Practices, Proceedings of the 5th National Public Health Engineering Conference. Bulletin No. 57. No. 79, Aerobic Biological Stabilization of Organic Substrates. Bulletin No. 38, Some Applications of Radar Equipment to Meteorology. No. 76, Recent Developments in Radio Location of Thunderstorm Centers.

National Research Council. Road Test Pne-MD, publication 227. Highway Research Board. $2 25.

Labor and Industry in Britain. British Information Services. Vol. 10, No. 1, 1952.

INTERESTING PAMPHLETS

Preferred Utilities for Storage and Handling of Heavy Fuel Oils. Bulletin No. 1644. Comprehensive treatise on fuel oil heating prepared by the Preferred Utilities Mfg. Corp., 1860 Broadway, New York.

Industrial Water Pollution, Survey of Legislation and Regulations by Chemonomics, Inc. $5.00.

Patents for Technical Personnel, by Dr. Worth Wade, by Chemonomics, Inc. $3.50.

Highway Research Abstracts, Vol.. 21, No. 11. Synopsis issue: 31st annual meeting, Highway Research Board. $3.00 a year. Single copies 30 cts.

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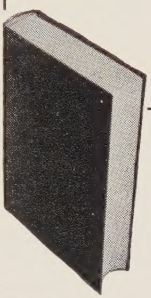

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The Southern Pine Story, Southern Pine Assn., New Orleans, La.

Proceedings of the 5th annual Florida Highway Conference, 1951. Bulletin Series No. 50. Education at the College of Engrg. Bulletin No. 52. Sedimentation Procedures for Determining Particle Size Distribution. Bulletin No. 54. Proceedings of the Fourth Annual Surveying and Mapping Conference 1951, Bulletin No. 51.

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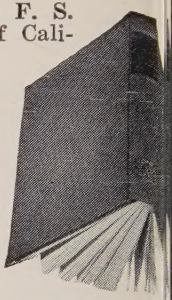

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